WESTERN WIND ENERGY

June 2004

AGENDA

- Introduction
- Summary of Western Wind Energy Corporation
- Resource Locations
- Wind Profile
- Generator and Turbine Characteristics
- Transmission Issues
- Interconnection Issues
- Economic Issues
- Closing Remarks

INTRODUCTION

- Western Wind Energy Corporation
  - Mike Patterson, Chairman
  - Mike Boyd, Director
  - Cash Long, Director
  - Steve Mendoza, Chief Engineer

- Vesta Americas
  - Robert Zdebski
  - Ken Polnicky

Western Wind Energy Corporation

Summary

MISSION STATEMENT

Combine our technical expertise and engineering experience with our extensive financial and business knowledge to develop efficient, reliable and environmentally friendly wind energy projects.

GOAL

Grow Western Wind Energy from a present portfolio of 135 megawatts in project developments into a major wind energy developer.

COMPANY STRATEGY

The Dakotas, Saskatchewan, the Aleutian Islands and Hudson's Bay host wind resources capable of generating all the power needs of North America, however, the restrictive nature of these locations make these resources unviable.

Our Company strategy is to find and develop viable lower wind energy resources capable of being delivered to nearby high population density areas with high per capita loads.

CORPORATE CAPITAL STRUCTURE

Our public company status allows us to employ the right combination of utility experts, wind energy pioneers, executive leadership, debt free project development and resource ownership.

ADVANTAGES OF WIND ENERGY

- Clean, pollution free, renewable
- No fuel costs
- Price stability
- Low operating costs
- Local job creation
- Energy independence from foreign fuel sources

WIND ENERGY STATUS BY COUNTRY

As of January 21, 2004:

Total Installed Wind Power Capacity:
39,294MW

Germany:	14,609MW
USA:	**6,374MW**
Spain:	6,202MW
Denmark:	3,110MW
India:	1,815MW
Italy:	904MW
Canada:	**312MW**

Source: World Wind Energy Association

WESTERN WIND ENERGY

WORLD WIND GENERATION

Percentage Wind Generated vs.

Total Energy Production

Denmark	19%
Germany	4%
USA	0.3%

WESTERN WIND ENERGY

WIND MARKET BY STATE

California	2,043 MW
Texas	1,293 MW
Minnesota	563 MW
Iowa	471 MW
Wyoming	285 MW
Oregon	259 MW
Washington	244 MW
Colorado	223 MW
New Mexico	207 MW

WESTERN WIND ENERGY

RESOURCE SELECTION

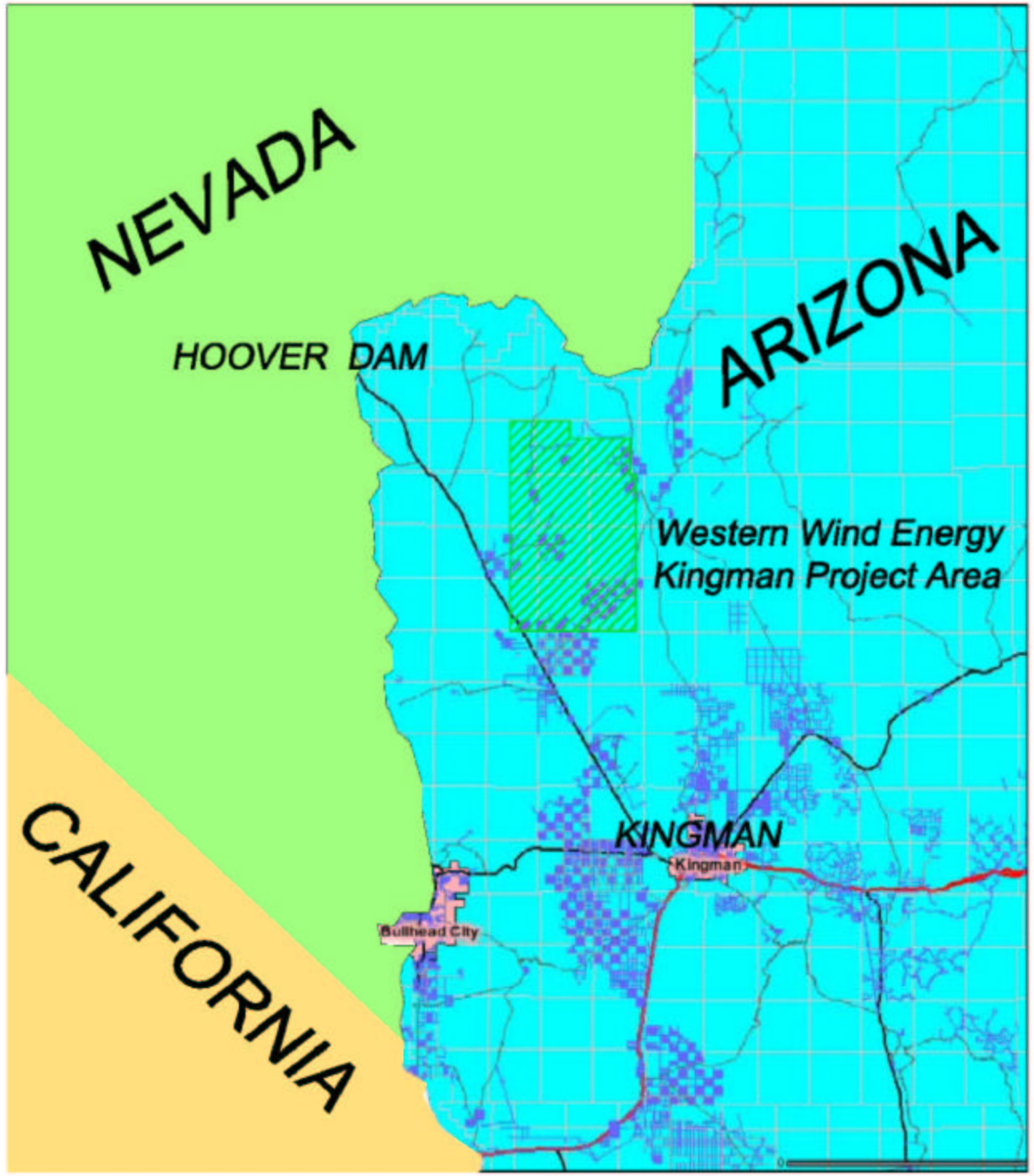
- Available transmission
- Access to transmission
- Commercially viable wind resource
- Favorable zoning policy
- No cultural or environmental impediments
- Regulatory support
- Political support
- Adequate incentives

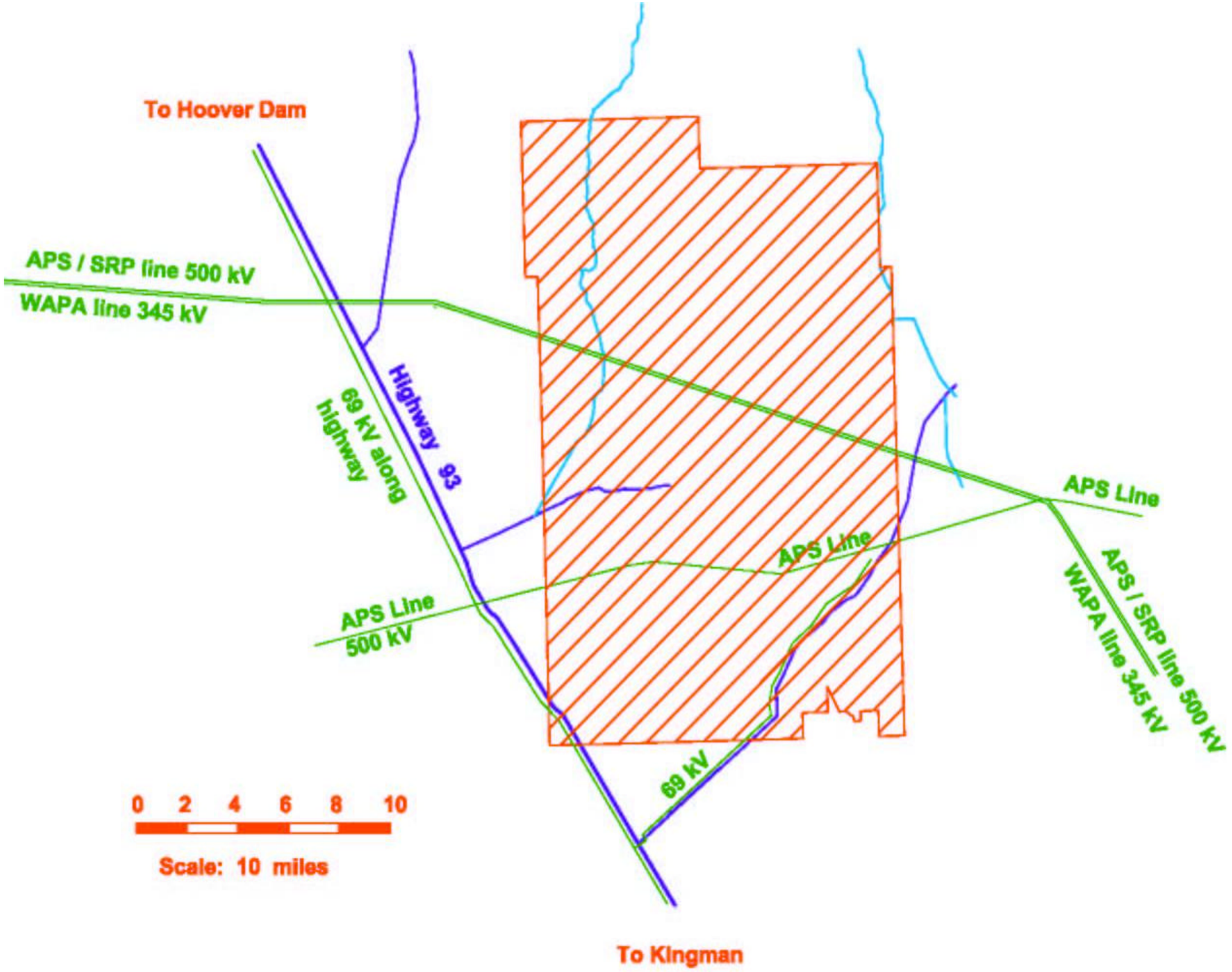
WESTERN WIND ENERGY

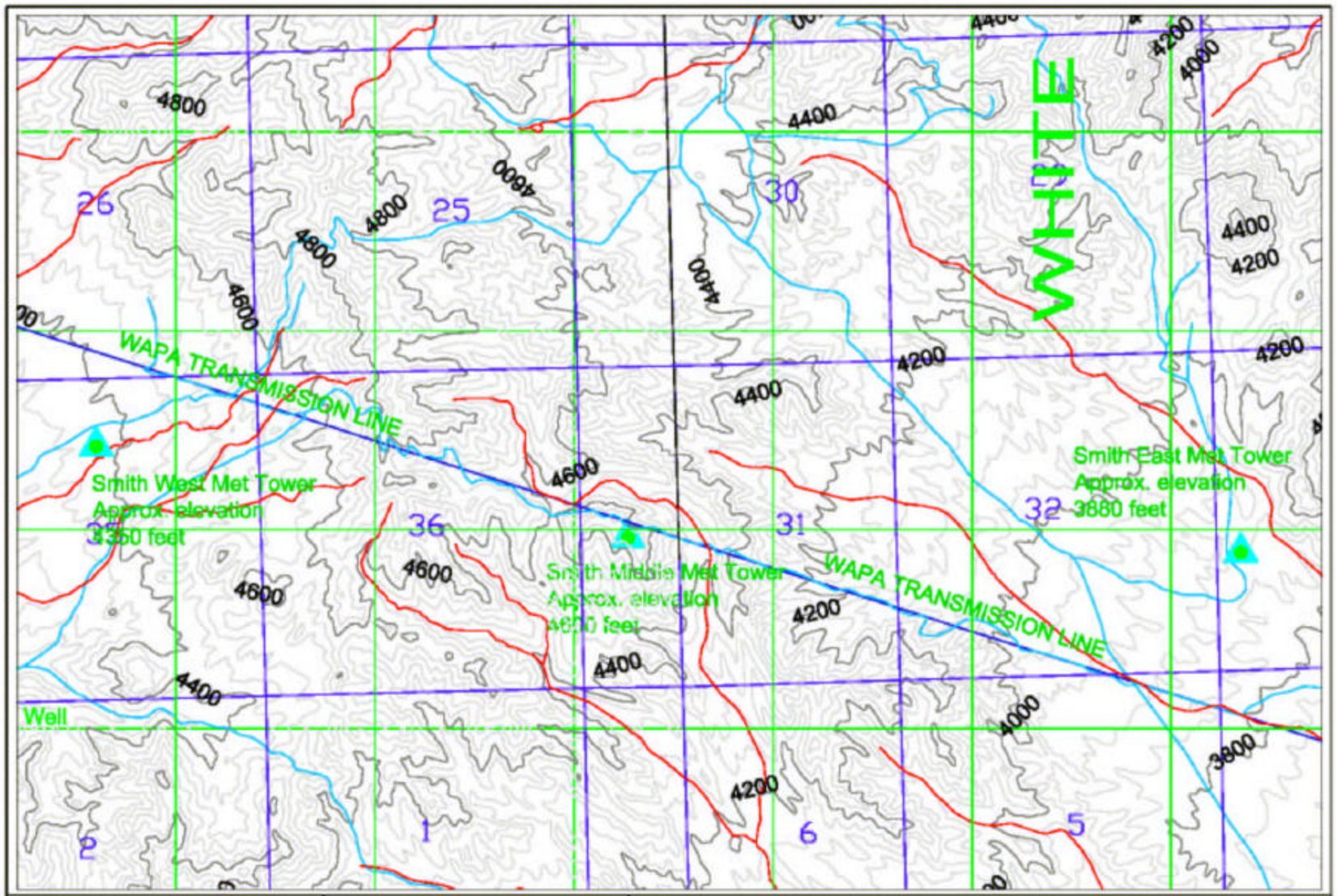
Resource Locations

Western Wind Energy Corp. (WND) Active Projects

Western Wind Energy Corp. (WND)
Western US Wind Projects


NEVADA
ARIZONA
CALIFORNIA
HOOVER DAM
Western Wind Energy
Kingman Project Area
KINGMAN
Kingman
Bullhead City


To Hoover Dam
APS / SRP line 500 kV
WAPA line 345 kV
69 kV along highway
Highway 93
APS Line
APS Line
APS Line
500 kV
APS / SRP line 500 kV
WAPA line 345 kV
69 kV
0 2 4 6 8 10
Scale: 10 miles
To Kingman

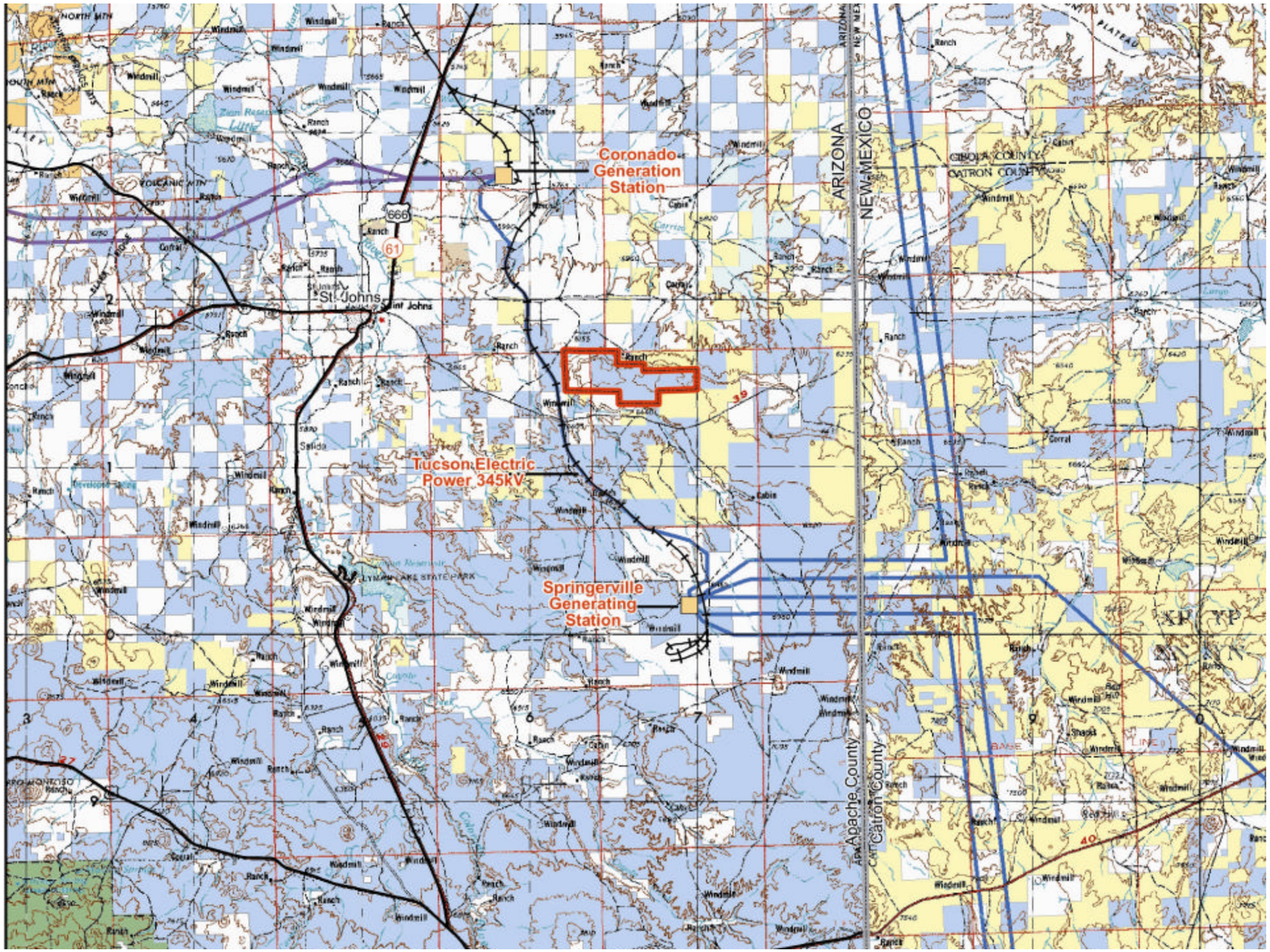


Scale: 1:40,000	Date: May 25, 2004	Location map: WND met towers #1, #2, #3
UTM NAD83	Revision: NA	WND/Verde: Kingman Project
Notes:	Drawn by: EWP Inc.	

LOOKING EAST

SENATOR MOUNTAIN

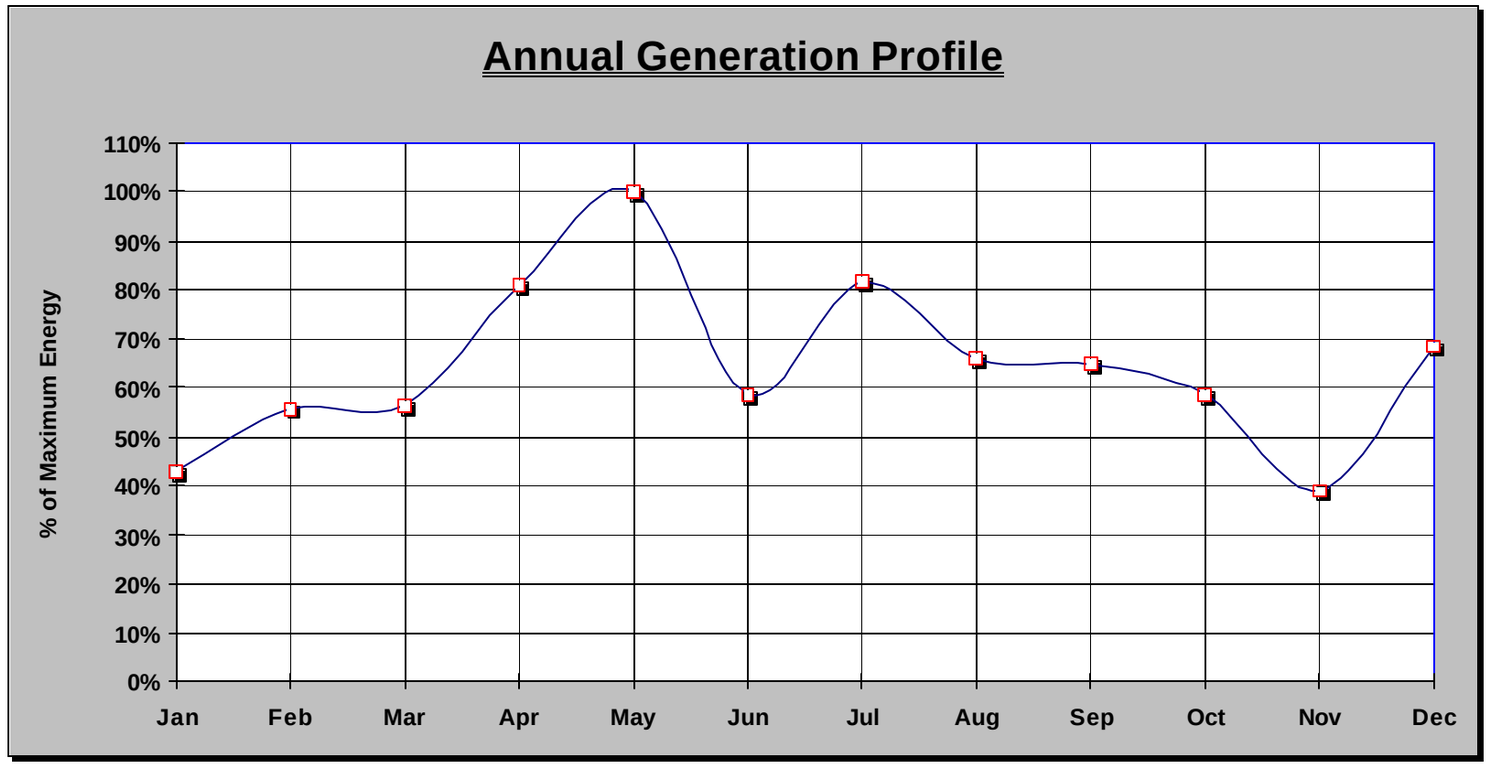
PROPOSED WIND GENERATORS


Coronado
Generation
Station
Tucson Electric
Power 345KV
Springerville
Generating
Station
ARIZONA
NEW MEXICO
Apache County
Catron County
St. Johns
666
61

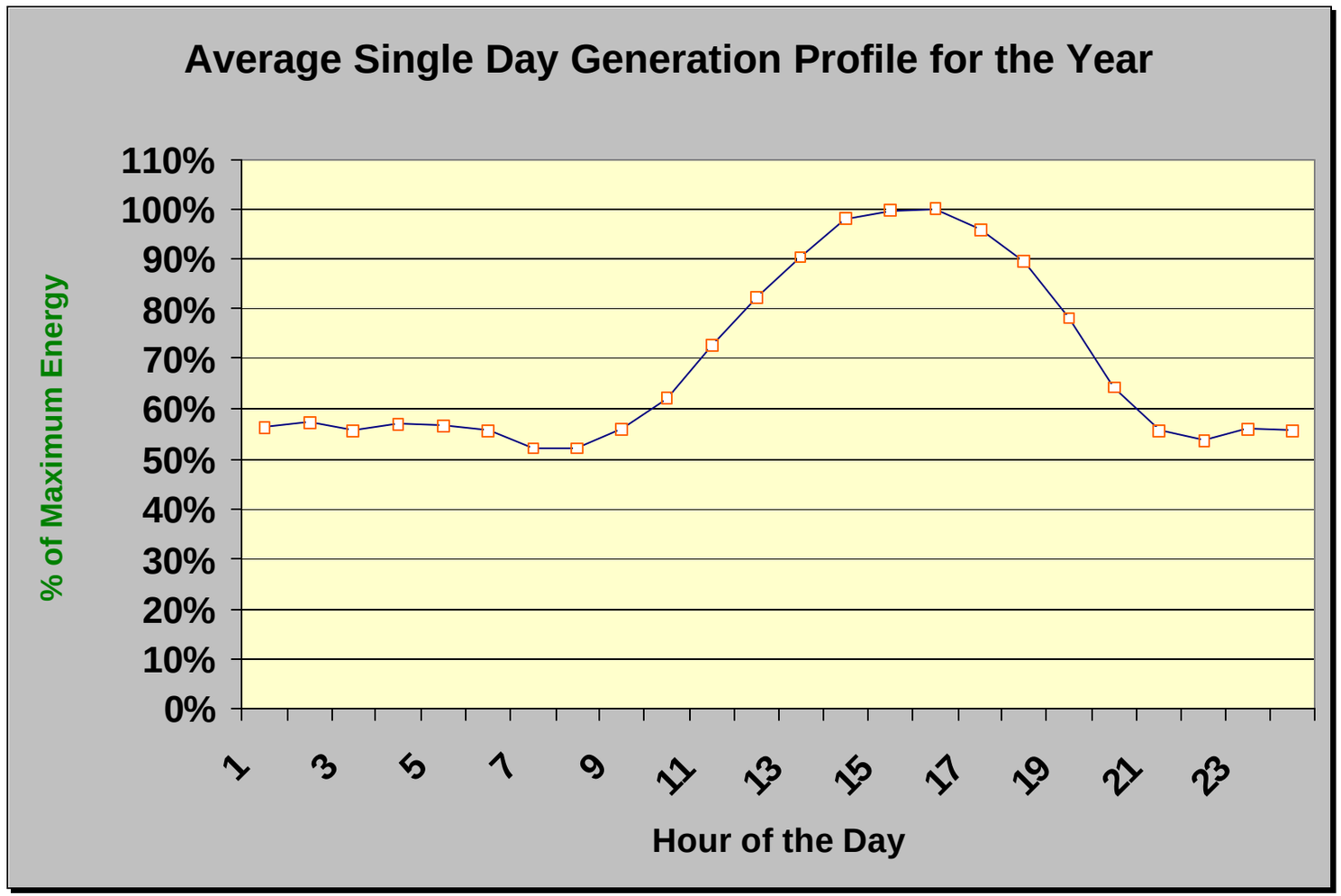
ST. JOHN'S AREA

Wind Profiles

KINGMAN


Annual Generation Profile
% of Maximum Energy
110%
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

KINGMAN


Average Single Day Generation Profile for the Year
% of Maximum Energy
110%
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1
3
5
7
9
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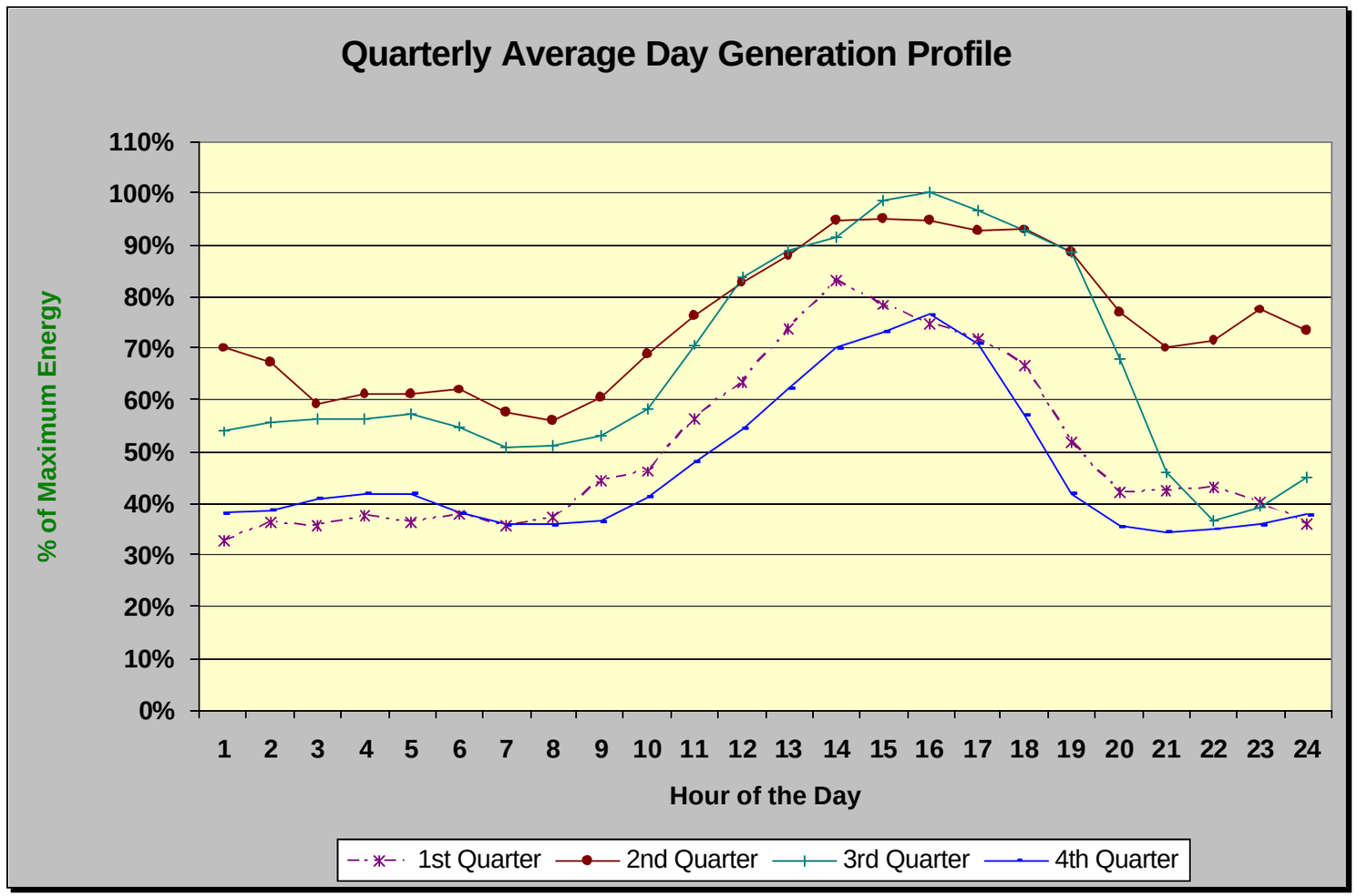
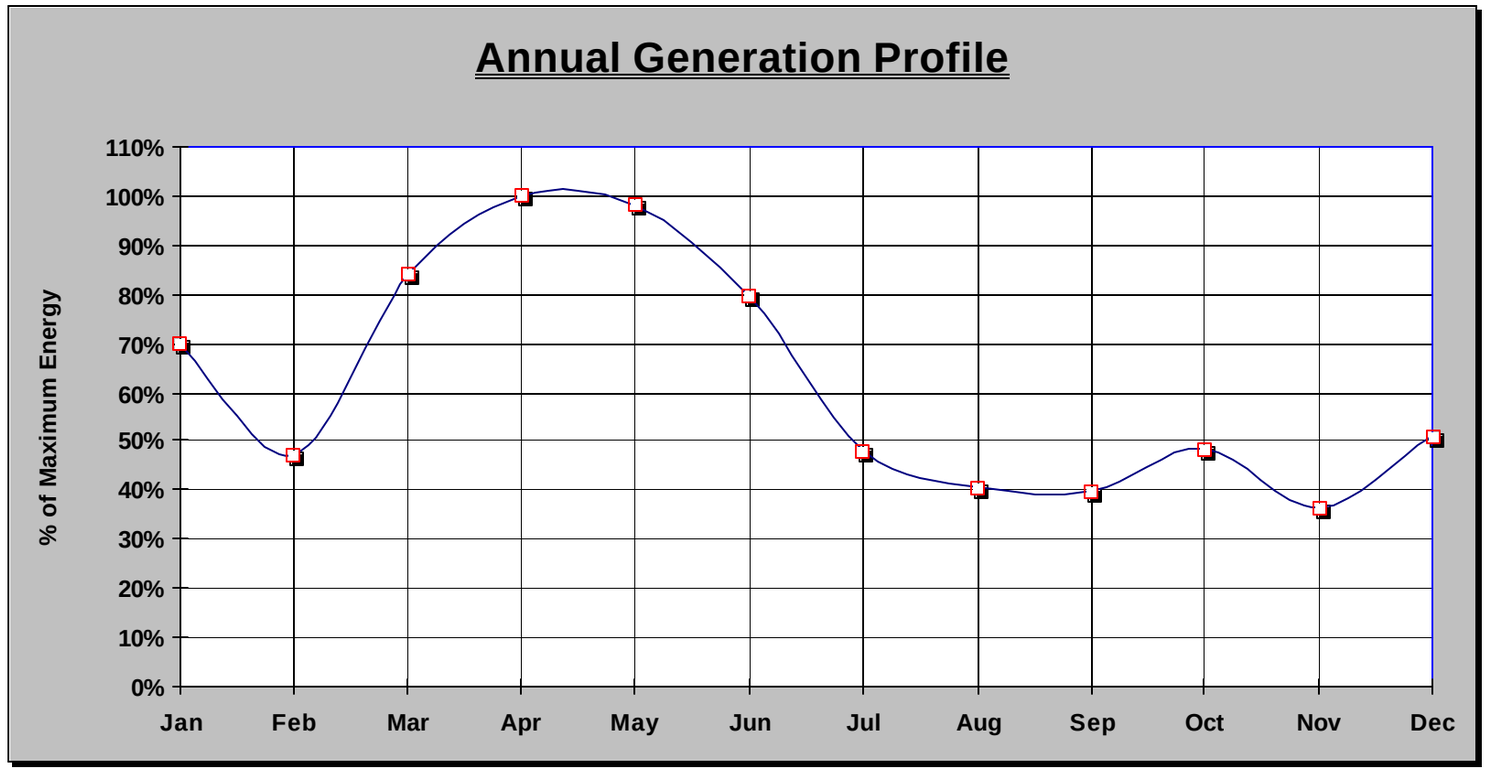
13
15
17
19
21
23
Hour of the Day

KINGMAN


Quarterly Average Day Generation Profile
% of Maximum Energy
110%
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour of the Day
1st Quarter
2nd Quarter
3rd Quarter
4th Quarter

ST. JOHN'S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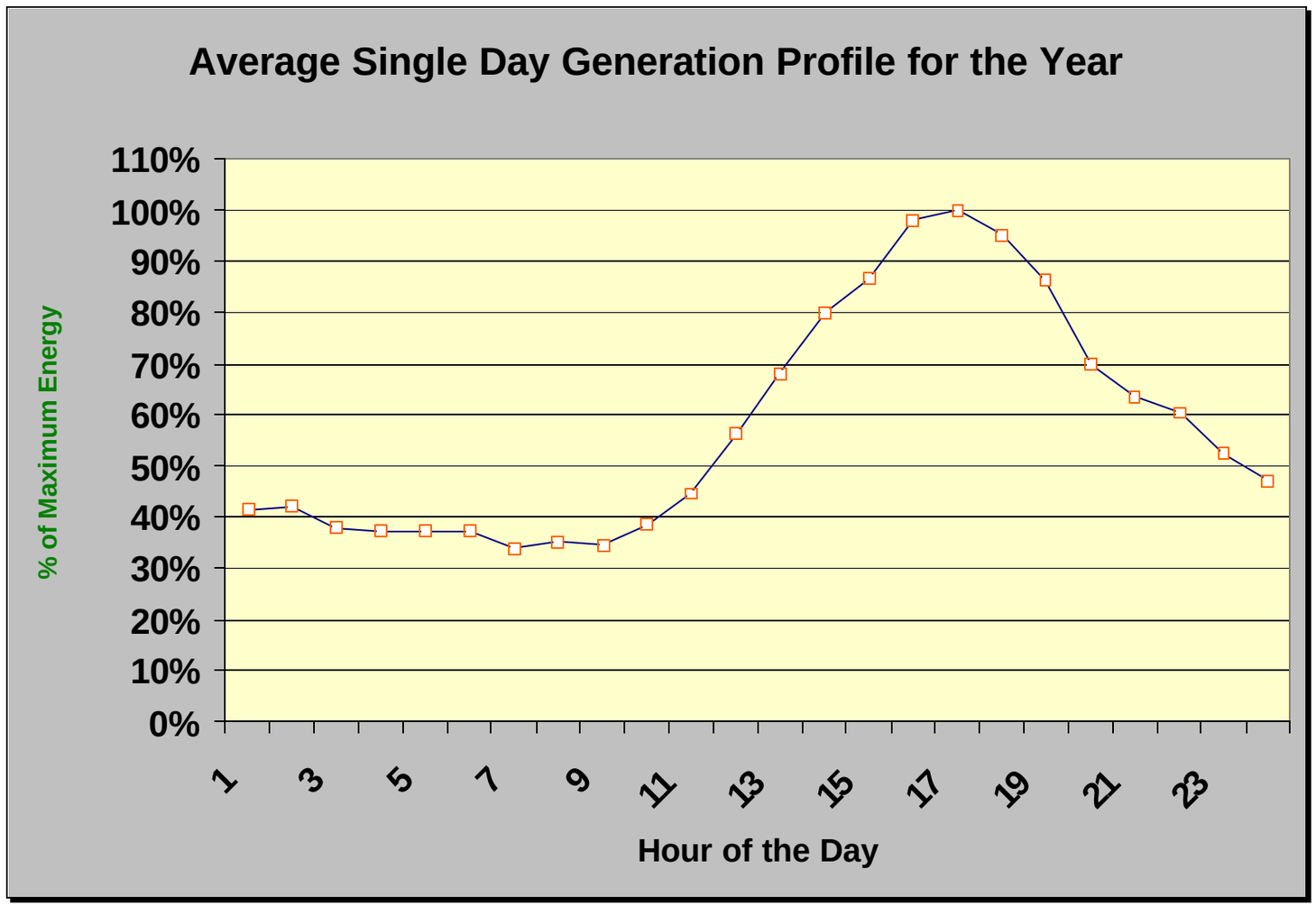
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Hour of the Day

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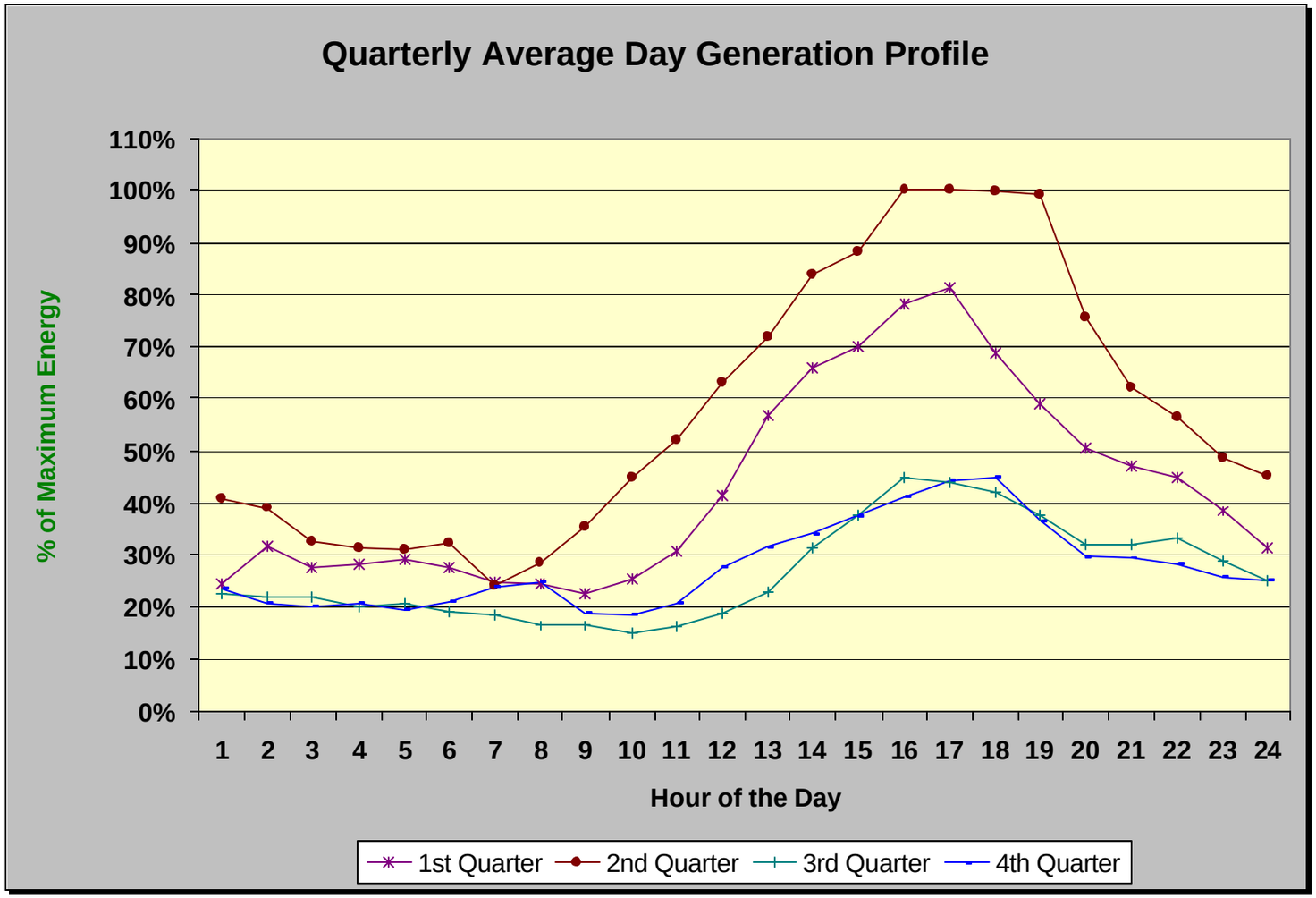
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0%
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Hour of the Day
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2nd Quarter
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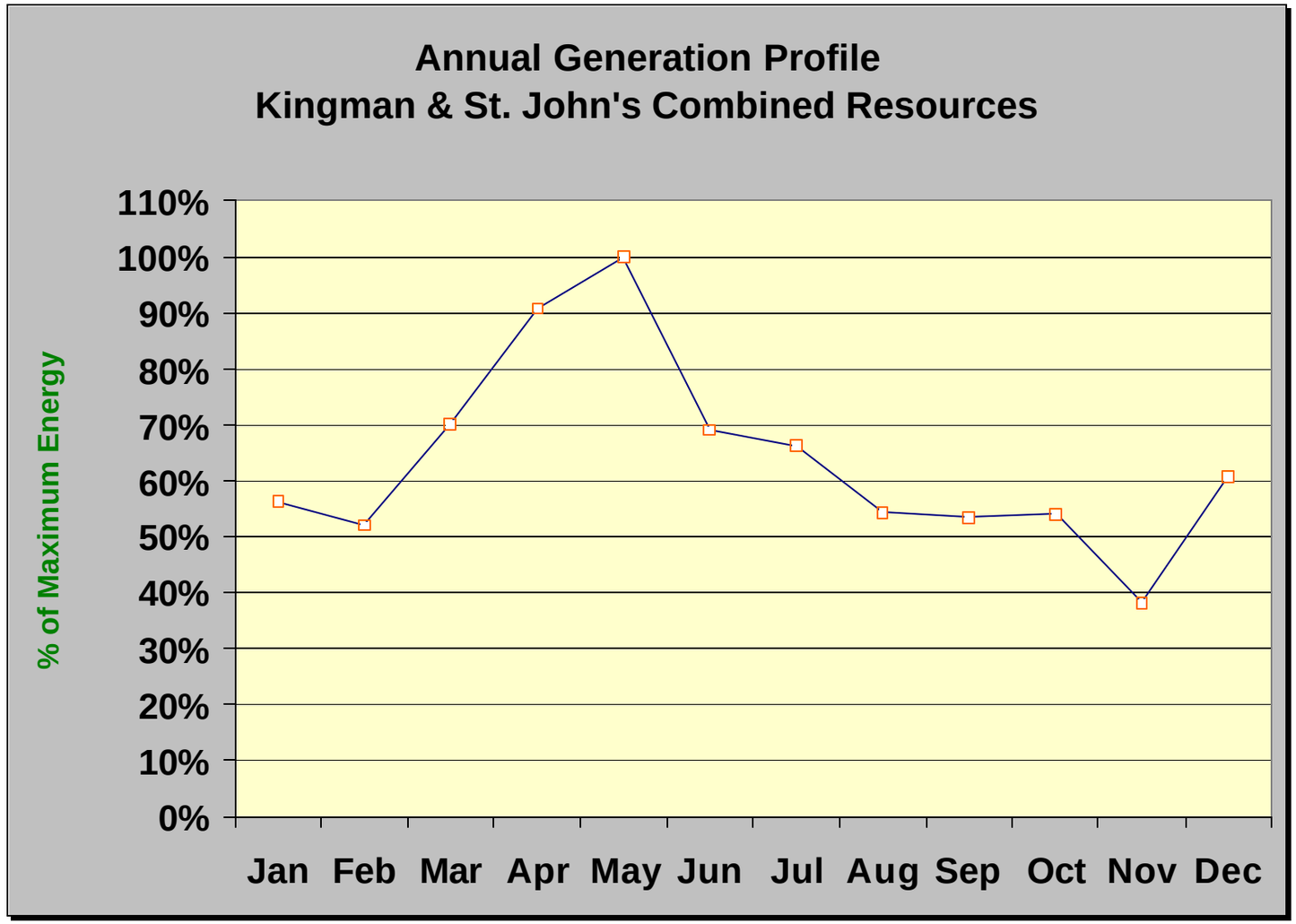
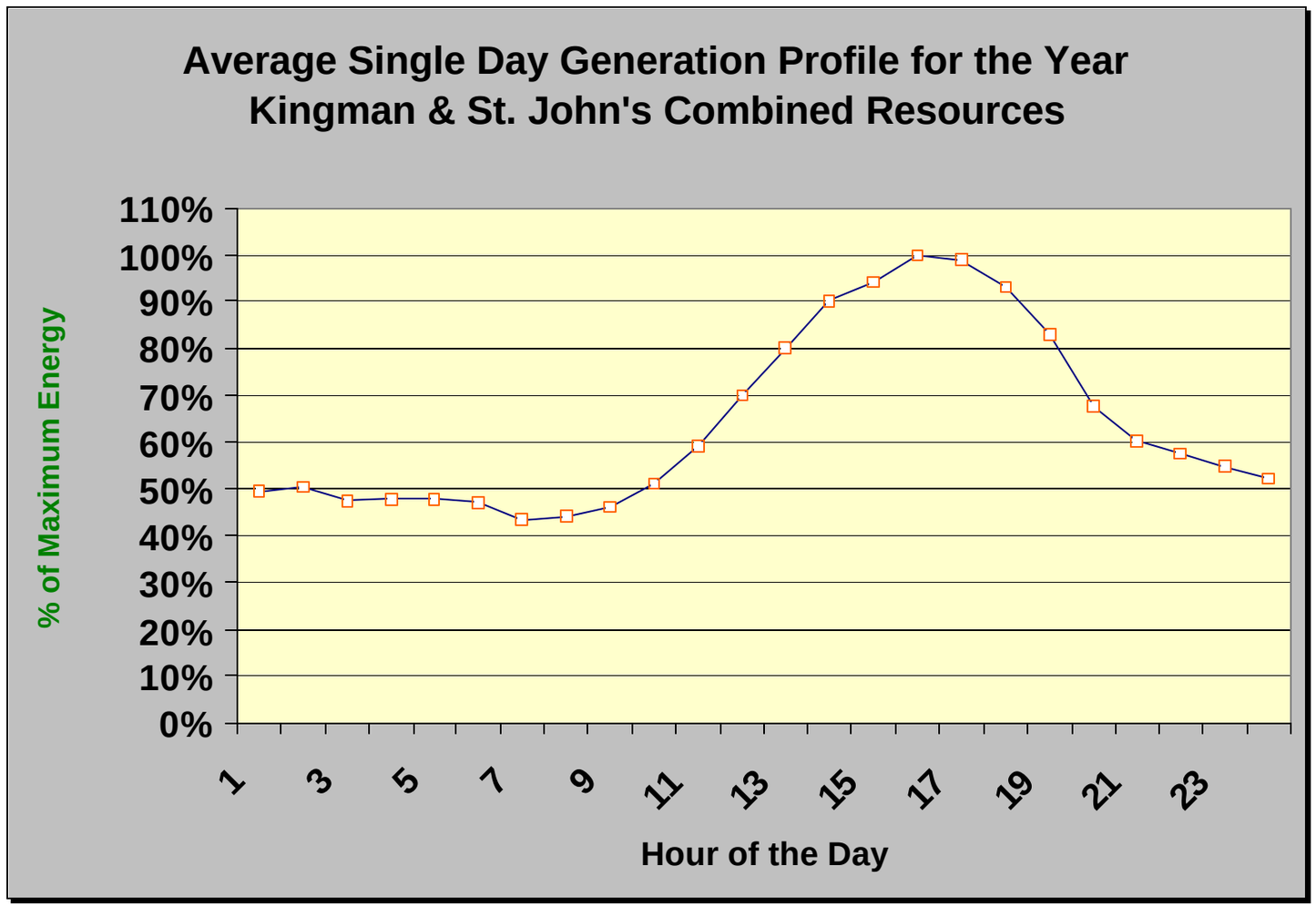
4th Quarter

COMBINED RESOURCES



COMBINED RESOURCES



WIND CHARACTERISTICS

- A wind resource on average will vary from year to year approximately 2%
- Same month different year can vary up to 40%+
- Altitude has minimal effect on air density as it relates to the rotor; where as temperature has major effects

WESTERN WIND ENERGY

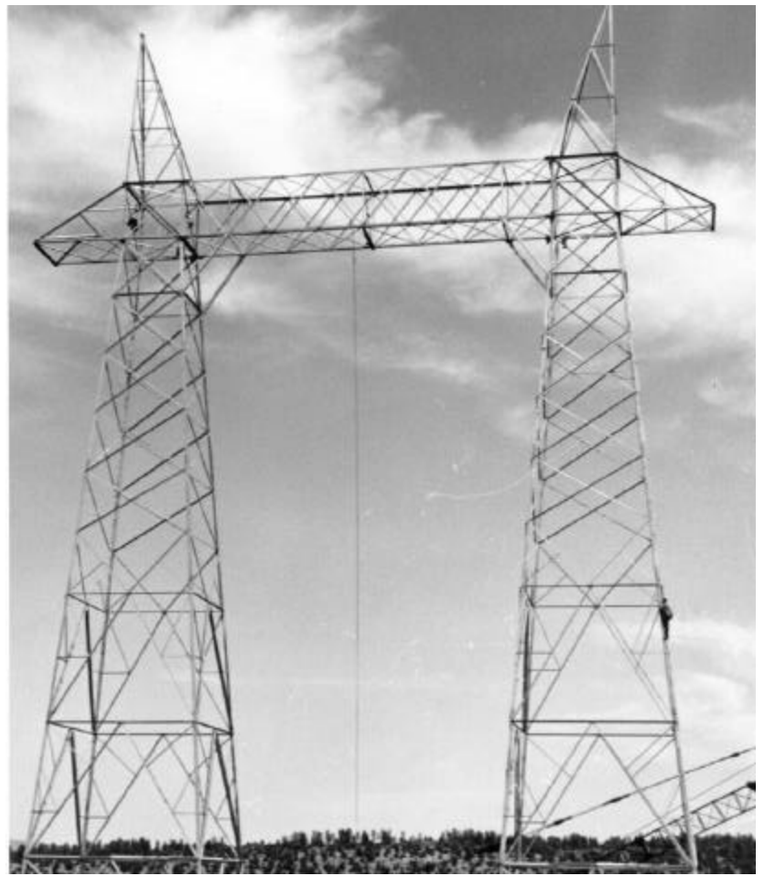
Generator and Turbine Characteristics

Vestas.ppt

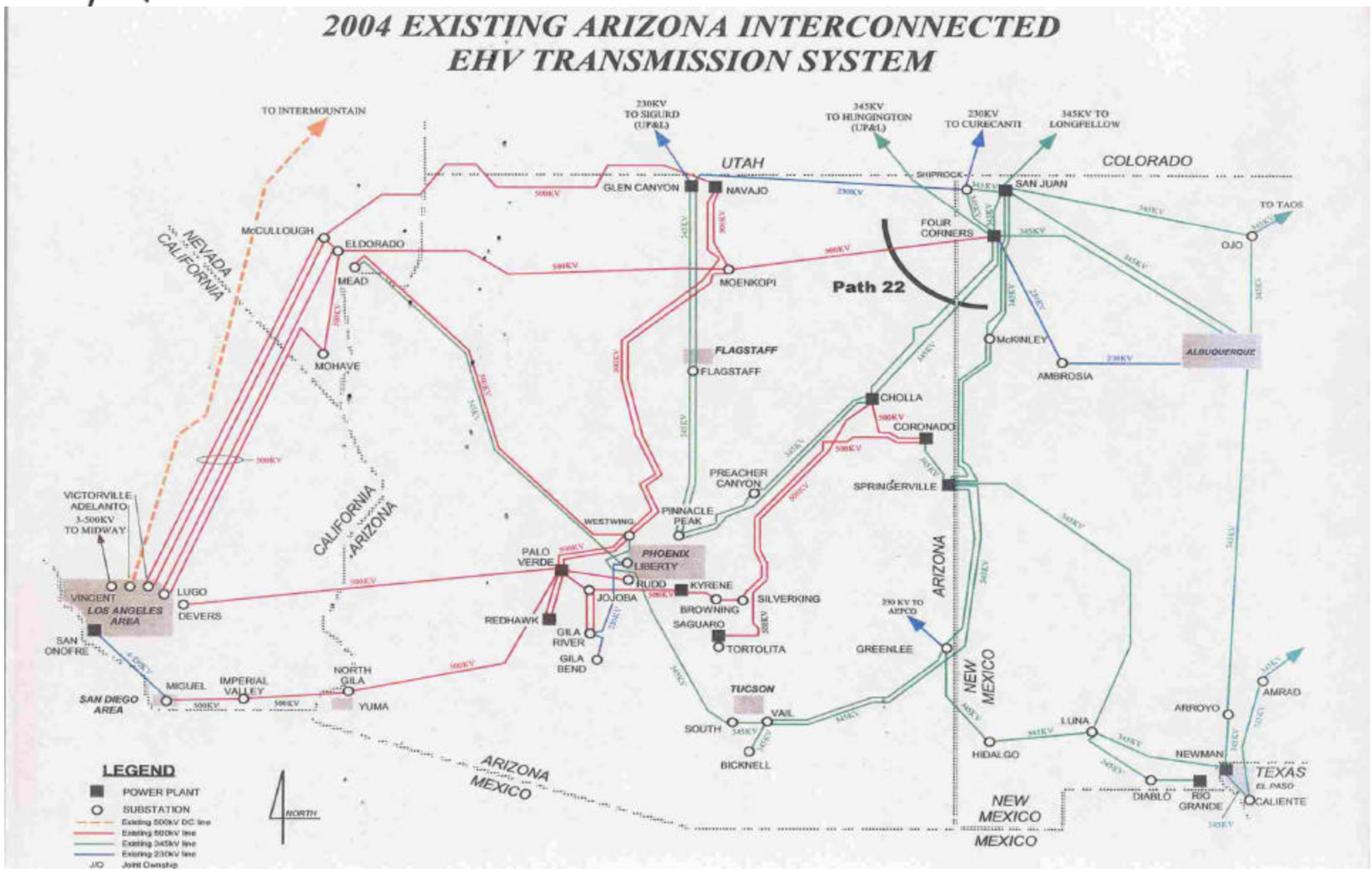
Transmission Issues

EXISTING TRANSMISSION

- Location
- Voltage levels
- Capacity availability
- System upgrades



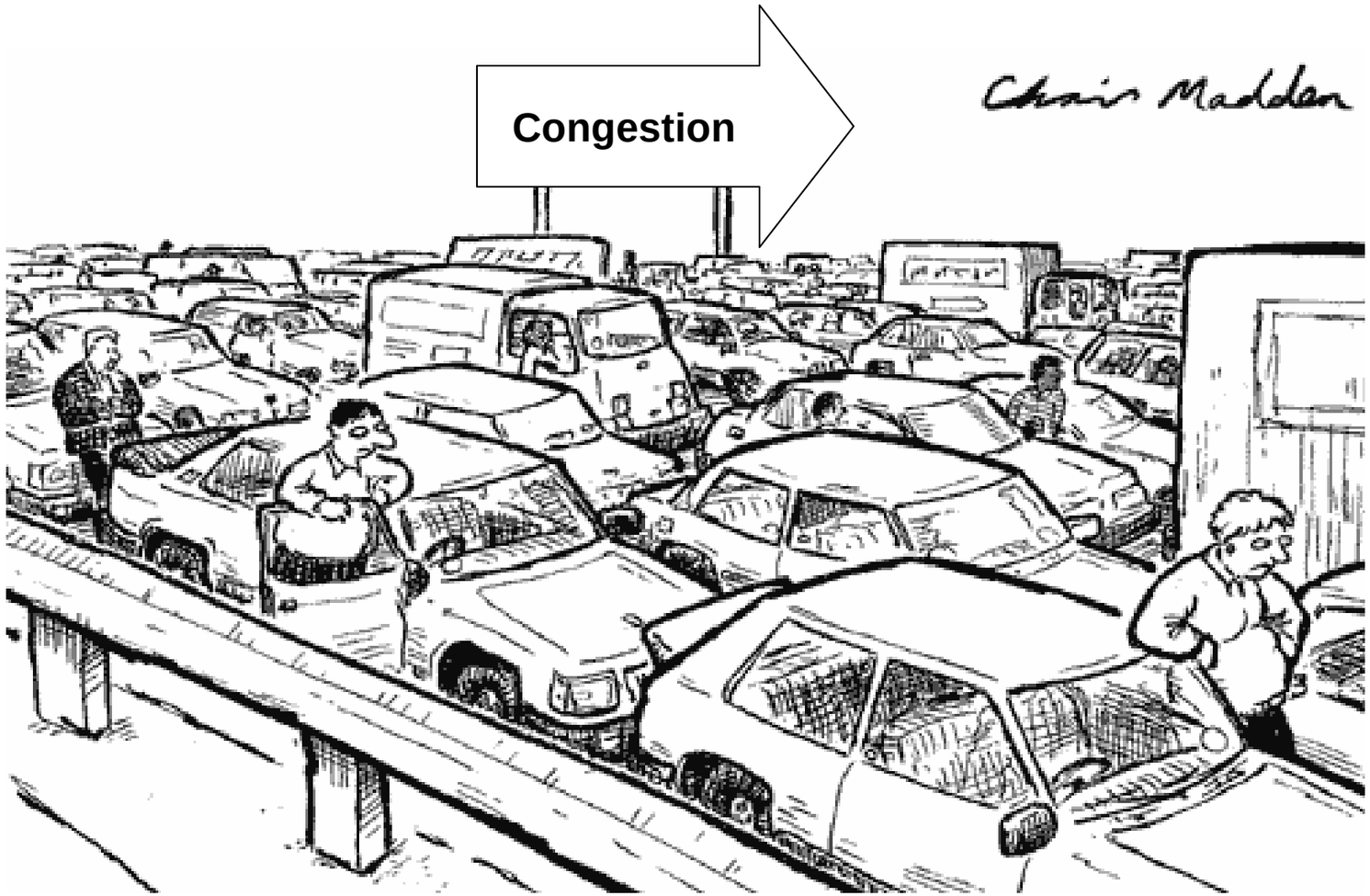
LOCATION


2004 EXISTING ARIZONA INTERCONNECTED
EHV TRANSMISSION SYSTEM
TO INTERMOUNTAIN
230KV TO SIGURD (UP&L)
345KV TO HUNGINGTON (UP&L)
230KV TO CURECANTI
345KV TO LONGFELLOW
UTAH
COLORADO
NEVADA
CALIFORNIA
GLEN CANYON
NAVAJO
SHIPROCK
SAN JUAN
TO TAOS
OJO
McCULLOUGH
ELDORADO
MEAD
MOENKOPI
FOUR CORNERS
Path 22
MOHAVE
FLAGSTAFF
FLAGSTAFF
McKINLEY
AMBROSIA
ALBUQUERQUE
CHOLLA
CORONADO
PREACHER CANYON
SPRINGERVILLE
VICTORVILLE
ADELANTO
3-500KV TO MIDWAY
CALIFORNIA
ARIZONA
WESTWING
PINNACLE PEAK
PALO VERDE
PHOENIX
LIBERTY
RUDD
KYRENE
SILVERKING
JOJOBA
BROWNING
SAGUARO
TORTOLITA
REDHAWK
GILA RIVER
GILA BEND
VINCENT
LUGO
DEVERS
LOS ANGELES AREA
SAN ONOFRE
MIGUEL
IMPERIAL VALLEY
NORTH GILA
YUMA
SAN DIEGO AREA
TUCSON
SOUTH
VAIL
BICKNELL
GREENLEE
230 KV TO AEPCO
ARIZONA
NEW MEXICO
HIDALGO
LUNA
ARROYO
AMRAD
NEWMAN
DIABLO
RIO GRANDE
CALIENTE
TEXAS
EL PASO
ARIZONA
MEXICO
NEW MEXICO
MEXICO
LEGEND
POWER PLANT
SUBSTATION
Existing 500kV DC line
Existing 500kV line
Existing 345kV line
Existing 230kV line
JO Joint Ownship
NORTH

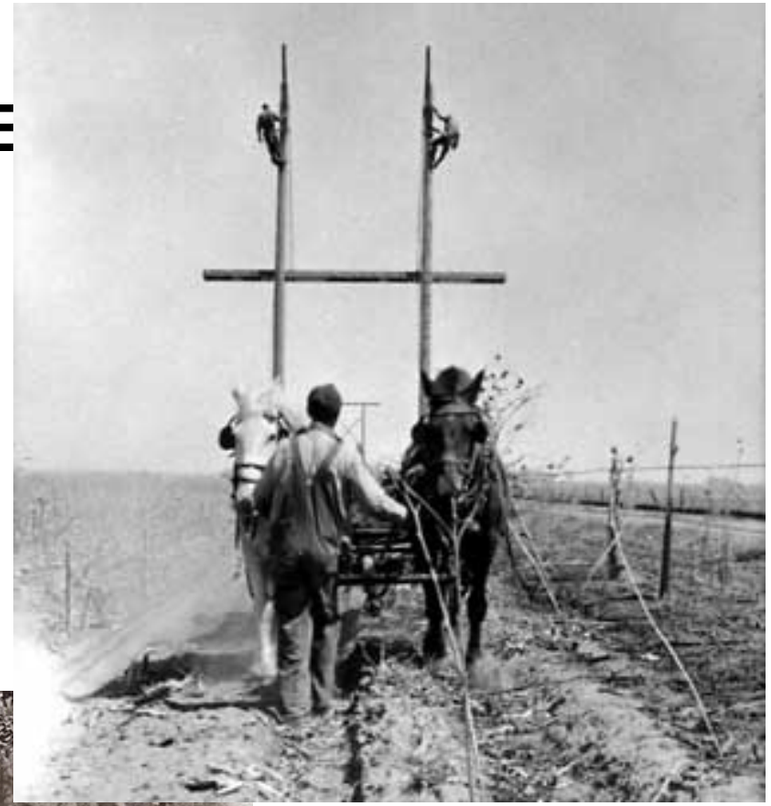
VOLTAGE LEVELS

- 500 kV
- 345 kV
- 230 kV
- 138 kV
- 115 kV
- 69 kV

CAPACITY AVAILABILITY



SYSTEM UPGRADE

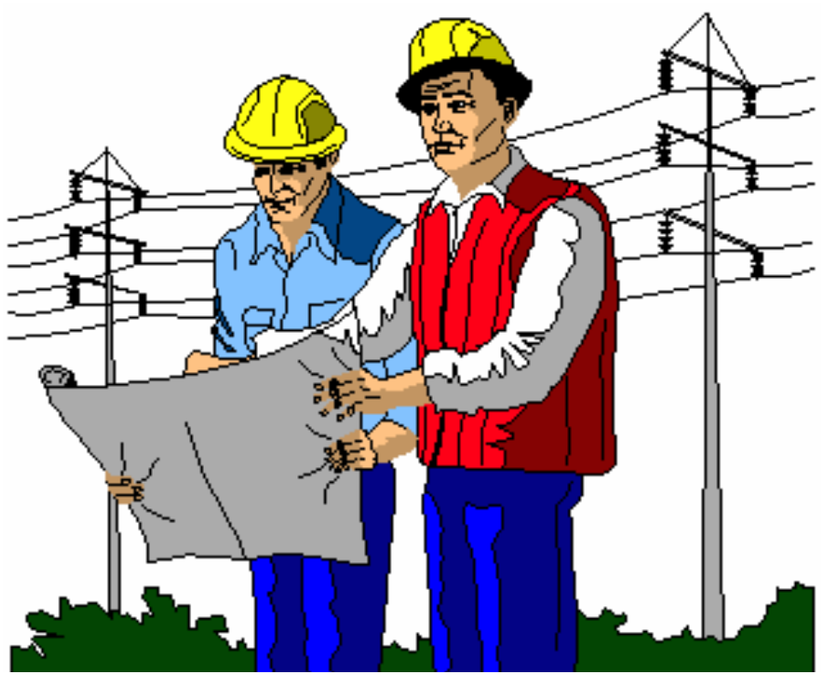


Modernize!

- **Series capacitors**
- **Phase shifters**
- **Transformers**
- **Conductors**

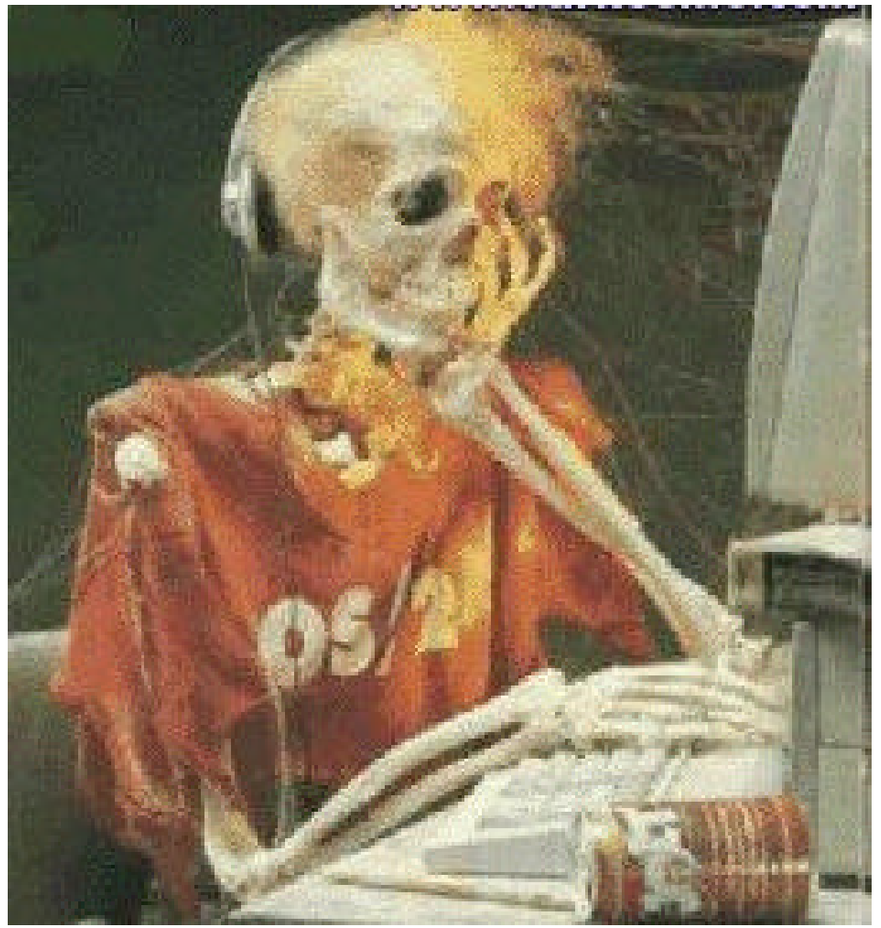
NEW TRANSMISSION

- Lead time
- Cost
- Environmental concerns



LEAD TIME

Project manager waiting for final siting approval

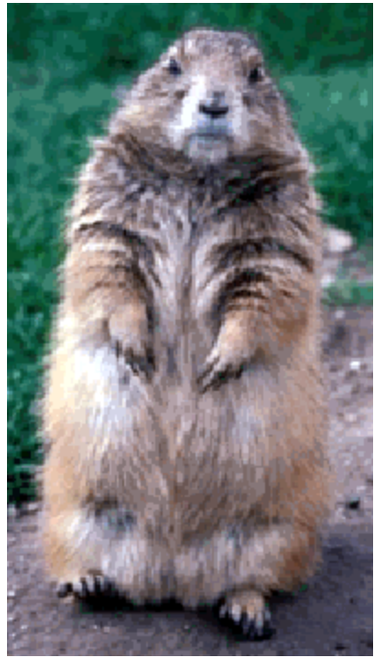


COST

- System studies
- Right-of-way
- Design
- Material
- Construction

- Environmental assessment
- Regulatory process
- Legal fees
- Excedrin

ENVIRONMENTAL CONCERNS



Protecting endangered species and their habitat

INTERCONNECTION ISSUES

- Voltage Flicker
- Power Factor
- Harmonics
- Non-firm
- Redundancy
- Reactive voltage
- Protection
- Impact studies
- Maintenance


TVIG


TVIG

Economic Issues

WIND FINANCING

Cost of Power:

3 cents/kwh to 7.5 cents/kwh

WIND FINANCING

Green Tags:

1 cent/kwh to 3 cents/kwh

WIND FINANCING

Federal Production Tax Credit (“PTC”):

1.1 cents/kwh to 1.8 cents/kwh

CLOSING REMARKS


LOONEY TUNES
"That's all Folks!"